

Serial No.: 10/705,652

Docket No.: R0042CON

Amendment Dated January 23, 2006

Responsive to the FINAL Office Action dated November 2, 2005

Amendments to the Claims:

A complete listing of all claims is presented below.

- 5 1. (Currently amended) Fluid sealing apparatus for operation with an endoscopic instrument at a surgical site, the apparatus comprising:
- a body having a central bore dimensioned to receive an endoscopic instrument therein, the bore extending through the body between distal and proximal ends thereof;
- an element disposed about the body near one of the distal and proximal ends thereof for selectively expanding radially outwardly about the body to provide an external tissue seal; and
- 10 a fluid seal disposed about the body near the other of the distal and proximal ends having an aperture therethrough substantially aligned with the central bore through the body, and having an inner dimension resiliently and flexibly disposed to receive an
- 15 endoscopic instrument therein in sliding fluid-sealing engagement therewith, wherein the diameter of the central bore is large enough to permit a range of angulation of an endoscopic instrument extending through the central bore,
- wherein the body includes a plurality of circumferential grooves for receiving and retaining both the element and the fluid seal.
- 20 2. (Previously presented) The apparatus according to claim 1 in which the element includes a balloon of substantially toroidal-shape attached to an outer surface of the body near the distal end thereof; and comprising:
- a fluid passage in a wall of the body in communication with the balloon and
- 25 extending along the wall toward the proximal end of the body for connection thereat to a source of fluid under pressure for selectively inflating the balloon.

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3. (Original) The apparatus according to claim 1 in which the fluid seal includes a generally toroidally-shaped member removably attached in fluid-sealing engagement with the proximal end of the body.

5 4. (Original) An endoscopic surgical procedure performed through an access port, the procedure comprising:

forming an incision in tissue;

dissecting tissue to form an anatomical space in tissue in communication with the incision;

10 inserting the access port within the incision and anatomical space;

laterally outwardly expanding the portion of the access port inserted within the incision to form fluid-sealing engagement with tissue about the incision;

inserting an endoscopic instrument into the anatomical space through the access port;

15 forming a fluid-tight seal in the access port in response to insertion of the endoscopic instrument in the access port;

insufflating the anatomical space with fluid under pressure during formation of the fluid-tight seal; and

20 disabling a fluid-tight seal within the access port to permit deflating the anatomical space inflated with fluid under pressure upon removal of an endoscopic instrument from within the access port.

5. (Original) An access port kit including:

25 a body having a central bore therethrough between distal and proximal ends thereof;

an element disposed about the body near the distal end thereof for selectively expanding laterally outwardly from the body;

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a plurality of resilient fluid seals, each selectively attachable to the proximal end of the body for forming a fluid-tight seal with the body near the proximal end thereof, each of the fluid seals including a resilient aperture therethrough of selected different dimensions disposed to axially align with the central bore in the body in position attached to the proximal end of the body.

6. (Previously presented) An access port kit including:

a body having a central bore therethrough between distal and proximal ends thereof,

an element disposed about the body near the distal end thereof for selectively expanding laterally outwardly from the body;

at least one resilient fluid seal for attachment in fluid-tight engagement with the body near the proximal end thereof, and including a resilient aperture therethrough of selected dimension to axially align with the central bore upon attachment to the body; and

an auxiliary resilient fluid seal for insertion within the resilient aperture of the resilient fluid seal to form a fluid-tight seal therewith, including an aperture therein of smaller dimension than the resilient aperture of the resilient fluid seal for forming a sliding, substantially fluid-tight seal about a cylindrical member of sectional dimension larger than the aperture in the auxiliary resilient fluid seal and smaller than the aperture in the resilient fluid seal.

7. (Previously presented) Fluid sealing apparatus according to claim 1 including an inlet conduit communicating with the bore for supplying fluid under pressure thereto.

8. (Previously presented) Fluid sealing apparatus according to claim 7 including a valve disposed within the inlet conduit for selectively controlling flow of fluid under pressure therethrough, the valve including an actuator attached thereto for configuring the valve to permit

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fluid under pressure to flow therethrough in response to engagement of the actuator with an endoscopic instrument disposed within the bore.

9. (Previously presented) Fluid sealing apparatus according to claim 7 in which the
5 central bore includes a portion thereof of diverging sectional dimension toward the proximal end thereof, and

the inlet conduit communicates with the portion of diverging sectional dimension.

10. (Previously presented) Fluid sealing apparatus according to claim 8 in which the
10 actuator includes a lever protruding through the inlet conduit to configure the valve for fluid flow therethrough in response to engagement of the lever with an endoscopic instrument disposed within the bore.

11. (Previously presented) Fluid sealing apparatus according to claim 3 including an
15 inlet conduit communicating with the bore intermediate the attachment of the member with the proximal end of the body, and the distal end thereof.

12. (Previously presented) The endoscopic surgical procedure according to claim 4 in
20 which insufflating the anatomical space is performed with fluid under pressure supplied through the access port.

13. (Previously presented) The endoscopic surgical procedure according to claim 12 in
25 which supply of fluid under pressure is terminated in response to removal of an endoscopic instrument from within the fluid-tight seal in the access port.

14. (Previously presented) An access port kit according to claim 5 in which the body
includes an inlet conduit communicating with the central bore for supplying fluid under pressure

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thereto at a location therein intermediate attachment of a fluid seal to the body and the distal end thereof.

5 15. (Previously presented) An access port kit according to claim 14 including a valve disposed within the inlet conduit for selectively controlling flow therethrough of fluid under pressure in response to insertion of an endoscopic instrument within the resilient aperture of a fluid seal.

10 16. (Canceled)

17. (Canceled)

15 18. (Currently amended) The apparatus according to claim ~~1~~ 17 wherein the element comprises a balloon, and wherein a pair of grooves provided at the distal end of the body is sized and spaced to retain the balloon on the exterior of the body, the body including a fluid passage in a wall thereof that opens outwardly at a location on the body between the two grooves in the pair of grooves.

20 19. (Previously presented) The apparatus according to claim 1 wherein the resilient fluid seal is disposed at the proximal end of the body and defines a transition section flared outward in a proximal direction.

25 20. (Previously presented) The apparatus according to claim 19 wherein the body includes an insufflation gas inlet having an aperture opening into the central bore at the transition section.

21. (Previously presented) The apparatus according to claim 19 wherein the central bore is at least 0.6 inches in diameter.

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22. (Previously presented) The apparatus according to claim 1 wherein the proximal end of the central bore defines a transition section flared outward in a proximal direction to increase the diameter of the central bore by at least about 50% from the distal end thereof.

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23. (Previously presented) The endoscopic surgical procedure according to claim 4 wherein the portion of the access port inserted within the incision includes a balloon, and wherein the step of laterally outwardly expanding comprises inflating the balloon.

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24. (Previously presented) The endoscopic surgical procedure according to claim 4 wherein the access port is defined by a body and a central bore therethrough, wherein the diameter of the central bore is large enough to permit a range of angulation of an endoscopic instrument extending therethrough.

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25. (Previously presented) The endoscopic surgical procedure according to claim 4 wherein the access port is defined by a body and a central bore therethrough and a primary resilient fluid seal attached to a proximal end thereof, wherein the step of forming a fluid-tight seal in the access port is accomplished by contact between an inner aperture of the primary resilient fluid seal and the endoscopic instrument.

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26. (Previously presented) The endoscopic surgical procedure according to claim 25 further including attaching an auxiliary resilient fluid seal to the primary resilient fluid seal, the auxiliary resilient fluid seal having an inner aperture smaller than the inner aperture of the primary resilient fluid seal.

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27. (Previously presented) An access port kit according to claim 5 wherein the plurality of resilient fluid seals comprises a generally annular primary fluid seal including an outer perimeter adapted to couple to the proximal end of the body and having a resilient aperture being

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defined by a diaphragm extending inwardly from the outer perimeter and formed of a portion of the polymeric material that is thinner-walled than the outer perimeter.

28. (Previously presented) An access port kit according to claim 27 wherein the body
5 includes a plurality of circumferential grooves for receiving and retaining the primary resilient fluid seal.

29. (Previously presented) An access port kit according to claim 27 wherein the
plurality of resilient fluid seals further includes an auxiliary resilient fluid seal attachable to the
10 primary resilient fluid seal and having an aperture defined by an inwardly extending diaphragm that is smaller than the aperture in the primary resilient fluid seal.

30. (Previously presented) An access port kit according to claim 5 wherein the
element comprises a balloon, and wherein the body includes a pair of grooves provided at its
15 distal end sized and spaced to retain the balloon on the exterior of the body, the body including a fluid passage in a wall thereof that opens outwardly at a location on the body between the two grooves in the pair of grooves.

31. (Previously presented) An access port kit according to claim 30 further including a
20 fitting leading to the fluid passage and a one-way valve associated therewith to maintain inflation of the balloon.

32. (Previously presented) An access port kit according to claim 6 wherein the body
includes a plurality of circumferential grooves for receiving and retaining the resilient fluid seal.
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33. (Previously presented) An access port kit according to claim 6 wherein the element
comprises a balloon, and wherein the body includes a pair of grooves provided at its distal end
sized and spaced to retain the balloon on the exterior of the body, the body including a fluid

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passage in a wall thereof that opens outwardly at a location on the body between the two grooves in the pair of grooves.

34. (Previously presented) An access port kit according to claim 33 further including a fitting leading to the fluid passage and a one-way valve associated therewith to maintain inflation of the balloon.

35. (Previously presented) Fluid sealing apparatus for operation with an endoscopic instrument at a surgical site, the apparatus comprising:

10 a body having a central bore dimensioned to receive an endoscopic instrument therein, the bore extending through the body between distal and proximal ends thereof;
an inflatable element disposed about the body near one of the distal and proximal ends thereof for selectively expanding radially outwardly about the body unobstructively of the central bore;
15 a resilient fluid seal disposed external to the body near the other of the distal and proximal ends having an aperture therethrough substantially aligned with the central bore through the body, and having an inner dimension resiliently and flexibly disposed to receive an endoscopic instrument therein in sliding fluid-sealing engagement therewith;
an inlet conduit communicating with the bore for supplying fluid under pressure
20 thereto; and
a valve disposed within the inlet conduit for selectively controlling flow of fluid under pressure therethrough, the valve including an actuator attached thereto for configuring the valve to permit fluid under pressure to flow therethrough in response to engagement of the actuator with an endoscopic instrument disposed within the bore.

25 36. (Previously presented) An access port kit including:

a body having a central bore therethrough between distal and proximal ends thereof;

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an element disposed about the body near the distal end thereof for selectively expanding laterally outwardly from the body;

a plurality of resilient fluid seals, each selectively attachable to the proximal end of the body for forming a fluid-tight seal with the body near the proximal end thereof, each of the fluid seals including a resilient aperture therethrough of selected different dimensions disposed to axially align with the central bore in the body in position attached to the proximal end of the body; and

wherein the body includes an inlet conduit communicating with the central bore for supplying fluid under pressure thereto at a location therein intermediate attachment of a fluid seal to the body and the distal end thereof, and further including a valve disposed within the inlet conduit for selectively controlling flow therethrough of fluid under pressure in response to insertion of an endoscopic instrument within the resilient aperture of a fluid seal.

37. (New) Fluid sealing apparatus for operation with an endoscopic instrument at a surgical site, the apparatus comprising:

a body having a central bore dimensioned to receive an endoscopic instrument therein, the bore extending through the body between distal and proximal ends thereof;

an element disposed about the body near one of the distal and proximal ends thereof for selectively expanding radially outwardly about the body to provide an external tissue seal; and

a fluid seal disposed about the body near the other of the distal and proximal ends having an aperture therethrough substantially aligned with the central bore through the body, and having an inner dimension resiliently and flexibly disposed to receive an endoscopic instrument therein in sliding fluid-sealing engagement therewith, wherein the diameter of the central bore is large enough to permit a range of angulation of an endoscopic instrument extending through the central bore, and

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wherein the fluid seal is generally annular and comprised of a resilient polymeric material, the fluid seal including an outer perimeter adapted to couple to the other of the distal and proximal ends of the body, and the aperture being defined by a diaphragm extending inwardly from the outer perimeter and formed of a portion of the polymeric material that is thinner-walled than the outer perimeter for providing an effective fluid-seal around an endoscope received therein.

38. (New) The apparatus according to claim 37 in which the element includes a balloon of substantially toroidal-shape attached to an outer surface of the body near the distal end thereof; and comprising:

a fluid passage in a wall of the body in communication with the balloon and extending along the wall toward the proximal end of the body for connection thereto to a source of fluid under pressure for selectively inflating the balloon.

39. (New) The apparatus according to claim 37 in which the fluid seal includes a generally toroidally-shaped member removably attached in fluid-sealing engagement with the proximal end of the body.

40. (New) Fluid sealing apparatus according to claim 39 including an inlet conduit communicating with the bore intermediate the attachment of the member with the proximal end of the body, and the distal end thereof.

41. (New) Fluid sealing apparatus according to claim 37 including an inlet conduit communicating with the bore for supplying fluid under pressure thereto.

42. (New) Fluid sealing apparatus according to claim 41 in which the central bore includes a portion thereof of diverging sectional dimension toward the proximal end thereof; and the inlet conduit communicates with the portion of diverging sectional dimension.

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43. (New) Fluid sealing apparatus according to claim 41 including a valve disposed within the inlet conduit for selectively controlling flow of fluid under pressure therethrough, the valve including an actuator attached thereto for configuring the valve to permit fluid under pressure to flow therethrough in response to engagement of the actuator with an endoscopic instrument disposed within the bore.

44. (New) Fluid sealing apparatus according to claim 43 in which the actuator includes a lever protruding through the inlet conduit to configure the valve for fluid flow therethrough in response to engagement of the lever with an endoscopic instrument disposed within the bore.

45. (New) The apparatus according to claim 37 wherein the resilient fluid seal is disposed at the proximal end of the body and defines a transition section flared outward in a proximal direction.

46. (New) The apparatus according to claim 45 wherein the body includes an insufflation gas inlet having an aperture opening into the central bore at the transition section.

47. (New) The apparatus according to claim 45 wherein the central bore is at least 0.6 inches in diameter.

48. (New) The apparatus according to claim 37 wherein the proximal end of the central bore defines a transition section flared outward in a proximal direction to increase the diameter of the central bore by at least about 50% from the distal end thereof.